

REMARKS

Claims 1-10 are pending in the application. The claims are set forth herein for convenience, but have not been amended. Favorable reconsideration of the application is respectfully requested in view of the following comments.

I. CLAIM REJECTIONS – 35 U.S.C. § 102(e)

Claims 1, 2, 5, 7, and 8 stand rejected pursuant to 35 U.S.C. § 102(e) as being anticipated by Woods et al., U.S. Patent Application Publication No. 2002/0169993 (Woods). Woods discloses a system including multiple measurement/control modules that are synchronized with respect to the time of day. The modules may communicate with each other via a communication device, such as an Ethernet-based router or hub, which operates pursuant to a packet-based protocol. (Paragraph [0018].) Woods states generally that time synchronization may be performed pursuant to known synchronization protocols, such as GPS based systems, network time protocols (NTP), and the like. (See Paragraphs [0020], [0028].) Woods thus recognizes that the time-of-day synchronization is achieved by conventional methods.

Independent claims 1, 7, and 8 each recite, at a master component, generating timing signal packets containing timing signals at predictable intervals using a clock reference of a given frequency, and broadcasting or multicasting the timing signal packets to a plurality of client components over a packet network, preserving the timing signal packet intervals. Each client component determines the intervals between successive packets, and applies a clock recovery algorithm to the determined intervals to recover in substantially real time the original clock frequency. The frequency of a local clock of the client component is then synchronized to the recovered frequency.

At the outset, Woods addresses a wholly different issue from the claimed invention. The claimed invention provides a way to synchronize clock frequencies in a network. The system of Woods does not do this. Rather, Woods discloses synchronizing clocks that provide time-of-day information – in other words, the system of Woods merely tells time. Woods discloses that a timing packet 118 is sent to alert a clock synchronizer that a follow-up packet 116 is about to arrive. The synchronizer

notes the time of day of the local clock upon receipt of packet 118. The packet 116 contains the time of day as determined by a remote or master clock. The synchronizer then compares these times of day and, if necessary, adjusts the time of day of the local clock. (See paragraphs [0030-0033].) There is no description of how the correction is determined or applied.

This is radically different from the claimed invention. In the claimed invention, the timing signal packets are received by the client device at predetermined intervals. The client device determines the intervals between successive packets, and recovers the master clock frequency based on such intervals. The frequency of the local clock is then synchronized to the recovered frequency of the master clock. In Woods, although the time of day of the local clock may be adjusted, the adjustment is not based on the ***intervals between successive timing signal packets*** from the master clock. In Woods, the interval between successive timing signal packets from the master clock is irrelevant. The time of day of the local clock is simply adjusted to eliminate a variation with respect to the measured time of day of the master clock, but the frequencies of the clocks are not synchronized. Woods' synchronization of clocks that measure time of day, therefore, cannot be equated to the claimed frequency synchronization of network clocks.

Even if one were to analogize the two, Woods' method of synchronizing time of day differs from the method of frequency synchronization of the claimed invention. Woods discloses synchronizing the local module clocks based on a comparison of when a timing packet was generated by the master clock (the timestamp of element 116) and the time as measured by the local module clock. The local clock may then be adjusted to the master clock. In the claimed invention, synchronization is based on measuring the intervals between successive timing packets generated by the master clock, and recovering the master clock frequency based on such intervals. Woods, therefore, does not disclose various features of the independent claims. For example, Woods does not disclose that the master clock generates "timing signal packets containing timing signals ***at predictable intervals***", nor, at each client component, "***determining the intervals between successive packets***, [and] applying a ***clock recovery algorithm to said***

determined intervals to recover in substantially real time the original clock frequency”.

For at least these reasons, claims 1, 2, 5, 7, and 8 are not anticipated by Woods, and therefore the rejection of these claims should be withdrawn.

II. CLAIM REJECTIONS – 35 U.S.C. § 103(a)

Claims 3-4 and 9-10 stand rejected pursuant to 35 U.S.C. § 103(a) as being obvious over Woods in view of Dudziak et al., U.S. Patent Application Publication No. 2003/0136232 (Dudziak). Dudziak is merely cited for its reference to the particular types of networks and network links recited in these claims. Dudziak does not disclose or suggest the above deficiencies of Woods, and the Examiner does not indicate otherwise. Accordingly, a combination of Woods and Dudziak does not result in or disclose the invention as recited in claims 3-4 and 9-10.

Similarly, claim 6 stands rejected under 35 U.S.C. § 103(a) as being obvious over Woods in view of Chang, U.S. Patent Application Publication No. 2003/0020991 (Chang). Chang is merely cited for its reference to the use of priority markers. Chang does not disclose or suggest the above deficiencies of Woods, and the Examiner does not indicate otherwise. Accordingly, a combination of Woods and Chang does not result in or disclose the invention as recited in claim 6.

For at least these reasons, claims 3-4, 6, and 9-10 are not obvious over Woods in combination with Dudziak and/or Chang, and therefore the rejection of these claims should be withdrawn.

III. CONCLUSION

Accordingly, claims 1-10 are believed to be allowable and the application is believed to be in condition for allowance. A prompt action to such end is earnestly solicited.

Application No.: 10/643,129

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Respectfully submitted,

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